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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,669	04/16/2004	Marion Detert	104035/277533	9598
826	7590	02/01/2006	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			WU, IVES J	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/826,669	Applicant(s) DETERT ET AL.	
	Examiner Ives Wu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-16-04
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-7 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All . b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

(1). The disclosure is objected to because of the following informalities: On page 3, line 23-24, it recites "the average molecular weights of the polycarboxylic acid used can be between 200 and 2,000,000 g/mol, the range 2000 - 100,000 g/mol being preferably used". It is not defined that the average molecular weight to be either **number average** or **weight average** or other type of average molecular weight known to one of ordinary skill in the art.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(2). Claims 5 - 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 5, the symbols **p** and **o** in the formulas I, II and III are numbers representing the repeating units and limited by the range of average molecular weight cited in the Specification (page 5, line 1-2). Since the average molecular weight is **unclear** as aforementioned in paragraph (1), it therefore cannot be ascertained from the specification and the claim as to the scope of **p** and **o**.

Claims 6 and 7 are rejected because they depend on claim 5.

Allowable Subject Matter

Claims 1 ~ 4 are allowed.

The following is an examiner's statement of reasons for allowance: The closest

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prior art of the records located or identified by the examiner is Foster et al (WO 91/08281). Foster et al disclose the comb polymer (deflocculating polymer) with linear hydrophilic backbone by polymerizing suitable monomers units of acrylic acid, methacrylic acid (page 3, line 6-25) and sidegroups composed of alkoxy groups, for example butylenes oxide and/or propylene oxide, the sidegroups are connected to backbone via poly ethoxy linkage. Preferred polymers are of formula (I), (Ia) (page 3, line 34 – page 6, line 9). Foster et al teach the sidegroups R^9 and R^{10} also representing sulphonate such as $-\text{SO}_3\text{Na}$, $-\text{CO}-\text{O}-\text{C}_2\text{H}_4-\text{O}-\text{SO}_3\text{Na}$; however, lithium is not included in the sulfonic salt group which differs it from applicant's invention as claimed in instant claim 1.

The 2nd closest prior art of the records located or identified by examiner is Takebe et al in the Journal of Materials Chemistry, 1994 Title: Synthesis of a New Family of Comb Polymers with side chain esters and their films containing Lithium Trifluoromethane Sulfonate. In Takebe et al disclosure, the comb polymer is disclosed with polyester arms connected to backbone via ester group. The comb polymer is hybridized with LiCF_3SO_3 but not chemically bonded to the sidearms of comb polymer. The present invention requires that the salts of sulfonic group such NaSO_3 , and LiSO_3 linked to the sidearms of comb polymer. So that the sidearms of comb polymer taught by Takebe et al is different from the sidearms of comb polymer invented by applicant.

As of the date of this notice of allowability, the examiner not located or identified any reference that can be used singularly or in combination with another reference including Foster et al to neither suggest nor teach the present invention anticipated or obvious to one of ordinary skill in the art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

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Date: January 25, 2005


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700